

(19) World Intellectual Property
Organization
International Bureau



25 MAR 2005



(43) International Publication Date
8 April 2004 (08.04.2004)

PCT

(10) International Publication Number
WO 2004/028742 A3

(51) International Patent Classification⁷: **B24B 3/26**,
3/28, 3/32

Teakwood Drive, Eagle Point, OR 97524 (US). **MOST-
TLER, Keith** [US/US]; 13234 Antioch Road, White City,
OR 97530 (US).

(21) International Application Number:
PCT/US2003/030033

(74) Agent: **KERINS, John, C.**; Miles & Stockbridge P.C.,
1751 Pinnacle Drive, Suite 500, McLean, VA 22102-3833
(US).

(22) International Filing Date:
26 September 2003 (26.09.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/413,772 27 September 2002 (27.09.2002) US

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE,
GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR,
KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK,
MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT,
RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,
TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(71) Applicant (*for all designated States except US*): **PROFES-
SIONAL TOOL MANUFACTURING LLC** [US/US];
210 East Hersey Street, P.O. Box 730, Ashland, OR 97520
(US).

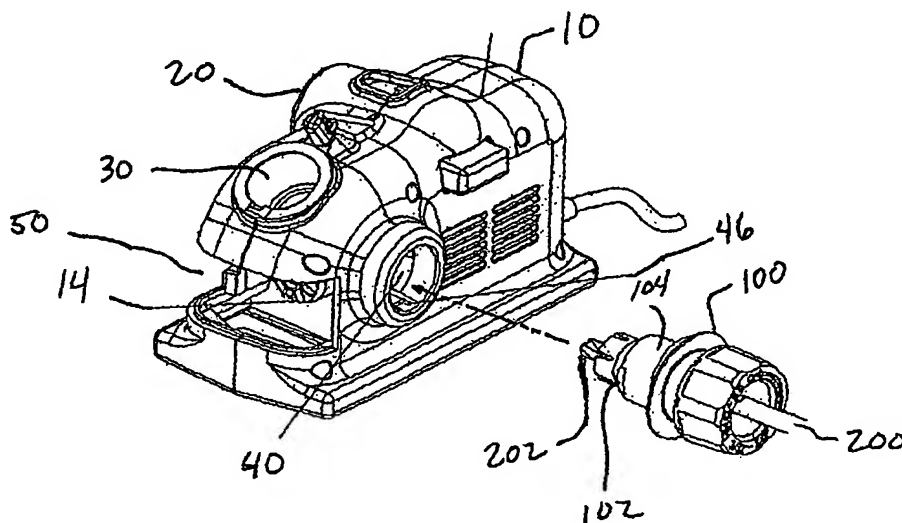
(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **BERNARD, David**
[US/US]; 378 Terrace Street, Ashland, OR 97520 (US).
CHRISTIAN, William [US/US]; 778 Oak Street, Ash-
land, OR 97520 (US). **HARRIS, Scott** [US/US]; 1990

[Continued on next page]

(54) Title: DRILL SHARPENER



(57) Abstract: A drill sharpener is provided which has a point-splitting port which simplifies the procedure for producing a split point on a drill bit (200) undergoing sharpening. The point-splitting port (40) is positioned relative to a grinding wheel assembly (14) such that, when the drill held by a chuck (100) that is advanced toward the grinding wheel, a flute of the drill at the drill tip is brought into contact with the grinding wheel. The port has alignment stops (42) therein which mate with flats provided on the barrel of the chuck to ensure proper alignment of the chuck and drill relative to the grinding wheel. The stops also limit the extent of inward travel of the chuck and drill to a predetermined distance. A debris or grit collection tube (60) is also provided to be inserted into an unused port of the drill sharpener, to contain and confine any debris or grit attempting to exit the sharpener through the unused port.

WO 2004/028742 A3



Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:

15 July 2004

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/30033

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B24B 3/26, 28, 32

US CL : 451/48, 349, 453

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 451/48, 349, 453

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,735,732 A (BERNARD) 07 April 1998 (07.04.1998), see figures 8, 11, 12	1, 2, 7, 8
Y		13-16
Y	US 2,426,478 A (WHIPPLE) 26 August 1947 (26.08.1947), see figures 1, 4 and 5	13-16

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

20 April 2004 (20.04.2004)

Date of mailing of the international search report

07 MAY 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US

Commissioner for Patents

P.O. Box 1450

Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

M Rachuba

Telephone No. 703-308-1148

Sheila H. Venty
Paralegal Specialist
Tech. Center 3700